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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,329	09/26/2001	Wolfgang Oelerich	NI 136	9453

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EXAMINER

OLTMANS, ANDREW L

ART UNIT PAPER NUMBER

1742

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/966,329	Applicant(s) OELERICH ET AL.	
	Examiner Andrew L Oltmans	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-15 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. Claim 3 is objected to because of the following informalities:

In claim 3, the last line recites, "the metal oxide is a rare earth metal", wherein the phrase appears omit the word "oxide", wherein the phrase should read, "the metal oxide is a rare earth metal oxide".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Kobayashi et al. 5,864,072

3. Claims 1-3 and 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. 5,864,072 (Kobayashi).

Kobayashi teaches a hydrogen storage material and method for manufacturing an electrode from the hydrogen storage material, wherein the electrode has a surface, the surface is exposed to oxygen and the resultant oxide film (i.e. metal oxide material) improves the PCT characteristics (i.e. acts as a catalyst facilitating they hydrogenation and dehydrogenation) (col 3):

In the practice of the invention, the hydrogen storage alloy ³⁵
undergoes two-stage thermal treatments including a first
thermal treatment of a bulky alloy and a second thermal
treatment of a powder of a ground alloy.

(col 4):

In order to improve the PCT characteristic, it is important
that the alloy be subjected to two-stage thermal treatments,
15 particularly, the second thermal treatment of an alloy powder
having a defined average size, and that the oxygen concen-
tration in the alloy be maintained at a certain level or below.

(col 5):

Alternatively, the alloy powder prior to the second thermal
treatment is placed in a desired mold or the like, pressed, and
finally subjected to the thermal treatment to obtain a shaped
sintered body. This shaped body may be used as an electrode ³⁵
as it is.

The claims do not distinguish over the teachings of Kobayashi.

Ovshinsky et al. 5,616,432

4. Claims 1-3 and 13-15 are rejected under 35 U.S.C. 102(b) as anticipated by Ovshinsky et al. 5,616,432 (Ovshinsky).

Ovshinsky teaches a hydrogen storage material and the fabrication of the material into electrodes and oxidizing the surface of the electrodes to improve bond strengths, catalysis and electrochemical stability, as recited in claims 13 (col 13, lines 10-63). Ovshinsky teaches the mechanical and chemical activation of the surface prior to the formation of the oxide film, as recited in claims 14-15 (col 14, line 66 to col 15, line 44). The claims do not distinguish over the teachings of Ovshinsky

Claim Rejections - 35 USC § 102/103

Japanese Patent 03-281710 A Mitsui Mining and Smelting

5. Claims 1-5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese Patent 03-281710 A Mitsui Mining and Smelting (JP '710).

JP '710 teaches a hydrogen storage alloy material (i.e. a metalliferous storage material), wherein material includes metal oxide, such as rare earth metal oxide, as recited in claims 1-3 (see English language abstract). The claims do not distinguish over the teachings of JP '710.

With respect to the limitation "as a catalyst..." (claim 1), the limitation "said metal has a nanocrystalline structure" and the limitation "said oxide has a nanocrystalline structure", one of ordinary skill in the art at the time the invention was made would have considered the invention to have been anticipated or obvious because the process steps taught by the reference are the same as the process steps recited in the claims (i.e. mixing a particulate hydrogen storage alloy material with a particulate oxide material in order to form a hydrogen storage material (JP '710: abstract)) and therefore one of ordinary skill in the art would expect that the resulting properties, including catalytic properties and crystalline structure would be the same.

"Where the claimed and prior art products are identical or substantially identical in structure or composition or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best 195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01. [emphasis added by examiner]

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European Patent Application EP 0 184 427 A2 Jo et al.

6. Claims 1-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over European Patent Application EP 0 184 427 A2 Jo et al. (EP '427).

EP '427 teaches a hydrogen storage composition and method of using a hydrogen storage composition, wherein the hydrogen storage composition includes metal oxides, such as rare earth metal oxides, as recited in claims 1-3 (page 3, lines 30-26). EP '427 teaches the claimed catalytic activity (page 2):

We have now found it possible to provide reversibly hydrogen absorbing-desorbing materials showing a hydrogen
10 equilibrium pressure lower than atmospheric pressure with a comparatively high hydrogenation composition at a temperature of less than 300°C, the materials having a low temperature for initially absorbing hydrogen and a sufficiently fast rate of absorbing and desorbing hydrogen. In addition the materials do
15 not require any initial activation treatment. These properties are achieved by dispersing specified amounts of one or more particular rare earth oxides into ZrV having a specified composition and forming a complex.

EP '427 teaches that the hydrogen storage material may be ground, as recited in claim 6 (page 4):

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Furthermore, the composition of the invention has various advantages in that it may be readily ground; the temperature condition and the like in initial hydrogenation is
10 optimised almost without changing the temperature-pressure-composition characteristic of the mother alloy in comparison with alloy improvement by conventional 3rd element addition; the reaction rate is increased; and it may be used as a getter for other impure gases.

The claims do not distinguish over the teachings of EP '427.

With respect to the limitation "said metal has a nanocrystalline structure" and the limitation "said oxide has a nanocrystalline structure, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been anticipated or obvious because the process steps taught by the reference are the same as the process steps recited in the claims (i.e. mixing a particulate hydrogen storage alloy material with a particulate oxide material in order to form a hydrogen storage material and grinding the material (EP '427: pages 3-4)) and therefore one of ordinary skill in the art would expect that the resulting properties, including catalytic properties and crystalline structure would be the same.

"Where the claimed and prior art products are identical or substantially identical in structure or composition or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best 195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01. [emphasis added by examiner]

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

European Patent Application EP 0 184 427 A2 Jo et al.

8. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application EP 0 184 427 A2 Jo et al. (EP '427).

EP '427 teaches and is applied as set forth above in paragraph 6.

EP '427 fails to meet all the limitations of the instant claims in that EP '427 does not explicitly teach the conditions of the grinding recited in claims 8-12.

However, one of ordinary skill in the art at the time the invention was made would have found the conditions of the grinding, including the use of an inert atmosphere, the order of the addition of the ingredients and the time for grinding obvious because the reference is a U.S. patent having a presumption of validity wherein one of ordinary skill in the art would find its disclosure enabling. In view of the fact that one of ordinary skill in the art would find the disclosure enabling, one of ordinary skill in the art would find it obvious to grind the hydrogen storage material under appropriate conditions that would provide the "advantage" (page 4, line 8), as taught in EP '427.

It is further noted that the applicant admits in the specification, that it is known in the prior art that grinding is a well-known method of manufacturing hydrogen storage alloys (specification, page 2): "[the manufacture of hydride storage devices], so far, have involved

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high-energy grinding of elemental components or pre-alloys or nano-crystalline alloys, wherein the grinding can be very long". Because grinding is well known in the art, one of ordinary skill in the art would find the particular conditions, such as the use of an inert atmosphere, the order of the addition of the ingredients and the time for grinding.

In view of the above, one of ordinary skill in the art would have found the instant claims to be obvious.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-6 and 8-15 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2 and 4-15 of copending Application No. 09/962,859 (now allowed). Although the conflicting claims are not identical, they are not patentably distinct from each other because the only difference in the claims is the scope of the intended use of the material and the scope of the limitations involving the oxides claimed. The differences in scope do not provide a patentable difference between the instant application and 09/962,859.

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This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L Oltmans whose telephone number is 571-272-1248. The examiner can normally be reached from 7:00 to 3:30, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Andrew L. Oltmans
Patent Examiner
Art Unit 1742

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